

LOCKHEED AIRCRAFT CORPORATION		ENGINEERING STUDY <input type="checkbox"/>		CHANGE PROPOSAL <input checked="" type="checkbox"/>		LAC-176				
DATE 25 March 1964		AFFECTS:		WSPO <input type="checkbox"/>		PROJECT <input checked="" type="checkbox"/>				
NAME OF MAJOR COMPONENT		PART OR LOWEST SUBASSEMBLY		PART NO. & MODEL C.R. TYPE						
TITLE OF PROPOSAL : <b>INSTALL A HYPOGLA WARNING SYSTEM</b>										
NATURE OF PROPOSAL :										
See Page 2 & 3										
REASON FOR PROPOSAL :										
Cancelled										
ES		ESTIMATED COST AND TIME INVOLVED :								
CP		ADDITIONAL FUNDING REQUIRED :								
		ESTIMATED COST FOR KITS OR PARTS : See Page 4								
		ADDITIONAL FUNDING REQUIRED : Yes (SP-1923)								
ITEMS AFFECTED BY PROPOSAL :										
SAFETY	MISSION EFFEC- TIVENESS	PERFORM- ANCE	OPERATING PROCEDURE	INTER- CHANGE ABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD 40										
SOURCE OF PARTS FOR KIT					AVAILABILITY _____ WEEKS AFTER APPROVAL					
LAC & GPE					See Page 4			Test phases only		
DISPOSITION OF SPARES AFFECTED					See Approval			STAT		
MA-2 HELMETS TO BE RETURNED TO FACTORY FOR REWORK								21/64		
INITIATED BY :					APPROVED : <input checked="" type="checkbox"/>					
Approved For Release 2002/08/21 : CIA-RDP89B00980R000200170049-2										

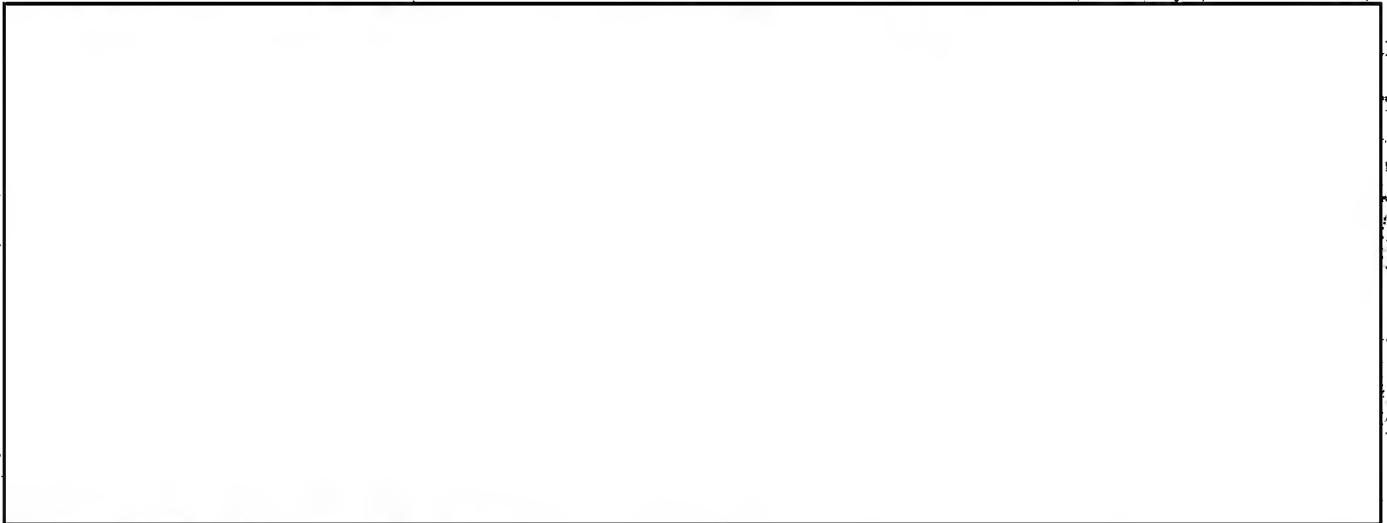
**PURPOSE:**

To warn the pilot of impending hypoxia and to signal the ground monitoring station via [REDACTED] 618T-3 of 2 conditions:

- a. Impending pilot hypoxia.
- b. Pilot breathing has stopped for more than 1 minute.

**NATURE OF PROPOSAL:**

1. Modify the aircraft and the MA-2 high altitude helmets by installing a hypoxia Warning System, manufactured by the Beckman Instrument Corporation. The major components of the system will be identical to those currently being supplied under Contract No. [REDACTED] for use by the Air Defense Command in F106 and F101 aircraft. This system has been undergoing operational development as well as static and flight tests by the United States Air Force for the past 2 years. Recent tests conducted during the month of December 1963 in F106 and F101 aircraft provided additional substantiation that the system is flight qualified. Major William Lee, Box 8072, Aeronautical System Division, Wright Patterson Air Force Base, Dayton Ohio, Phone: Clearwater 3-7111, Extension 33181, has been in charge of all development and tests.
2. Concurrent with processing of this proposal the Contractor is negotiating with Beckman Instruments to obtain one system on consignment for installation and operational evaluation in one of the Project aircraft.
3. The Amplifier-Indicator will provide two types of signals:



- a. The aircraft will be modified as follows:
  - a. Add a red HYPOXIA WARN light to the instrument panel or above the panel.
  - b. Install the hypoxia Indicator/Amplifier in the R. H. Console.
  - c. Revise the aircraft wiring and add 2 circuit breakers on the left side panel. Existing pilot and seat disconnects and harnesses for faceheat and interphone circuits will be replaced with harnesses and disconnects to include the additional 4 HYPOXIA warning circuits.
  - d. Install the GFE adapter box for monitoring pilot breathing.

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5. All MA-2 Helmets will be modified as follows:
  - a. Replace the existing 4 circuit interphone harness with an eight circuit harness to accommodate the existing interphone requirements and the hypoxia sensor. The new cable will terminate with two separate pull-apart dis- connects to mate with the interphone and hypoxia warning harnesses.
  - b. Install the hypoxia sensor receptacle and the sensor adjacent to the micro- phone.
6. In addition to the prototype installation and testing which will be accomplished in conjunction with other flight tests, the Contractor anticipates a total of 1 test flight to check the production installation of the hypoxia system and the operation of the GFE adapter box for monitoring pilot breathing.
7. After tests are complete the Contractor will issue two service kits: One to modify the 7 aircraft and the other to modify the MA-2 helmets. (Quantity of 35 helmets - EAFB 20, H 8, WRAMA 3, and LAC 4).
8. The installation will not weigh more than 5 pounds and moves the C.G. less than 0.1 inch forward.

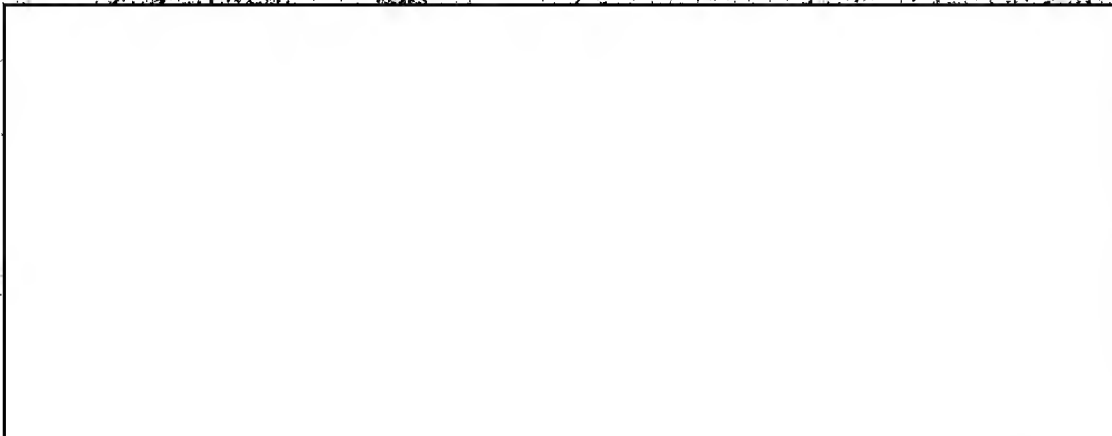
#### TEST EQUIPMENT

A special HYPOKIA TEST UNIT consists of a TEST AMPLIFIER UNIT and a SENSOR SIMULATOR.

The special TEST AMPLIFIER UNIT is recommended to preflight O<sub>2</sub> sensor checkout and, if desired, for monitoring the pilots oxygen supply during preparations for flight. Used in conjunction with a SENSOR SIMULATOR, the TEST AMPLIFIER UNIT would also be used for calibration of the aircrafts Hypoxia Warning Amplifier to match the particular sensor installed in the pilot's helmet during the preflight.

#### COST BREAKDOWN:

- I. Fabrication & Assembly of Kit Parts (SP-1922)



II.

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